

DIGITAL READING: GENEALOGY OF FORMATION AND PROSPECTS FOR ITS DEVELOPMENT IN A DIGITALIZED SOCIETY

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The theme of digital reading is becoming ever more relevant with a growing understanding of the importance of reading for developing both an individual and society as a whole. The issue addressed in the article is connected with the recently evolved concept of “digital reading”. The article is aimed at understanding digital reading and its core modifications – static (reading from the screen of an electronic gadget), reading of hypertext, reading in polymedia culture, as well as understanding what makes digital reading different (ideologically, physiologically, technologically) from traditional forms of reading. The author examines its genealogy as it was formed in the context of the evolution of writing and the emergence of new media and information centered printed culture. As a result the author specifies her own definition of digital reading and comes to the conclusion that it is most actively employed in education, which is rapidly becoming digitalized. The author also emphasizes the special function of modern libraries (public libraries, children’s libraries, school and university libraries), which should play the role of the “competent adult” in helping the user to develop the digital reading competences.

Keywords: reading, digital reading, training, education, technology, digital library

Citation: *Melentieva Y. P. Digital reading: genealogy of formation and prospects for its development in a digitalized society. Bibliosphere. 2019. № 4. P. 14–21. DOI: 10.20913/1815-3186-2019-4-14-21.*

Цифровое чтение: генеалогия формирования и перспективы его развития в условиях цифровизации общества

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Аннотация. По мере роста понимания важности чтения для развития личности и общества в целом проблемы цифрового чтения становятся все более актуальными. Рассматриваемый в статье вопрос связан с недавно возникшей концепцией «цифрового чтения». Цель статьи – дать понимание цифрового чтения и его основных модификаций: статического (чтение с экрана электронного гаджета), чтения гипертекста, чтения в полимедийной культуре, а также понимание того, что отличает цифровое чтение (идеологически, физиологически, технологически) от его традиционных форм. Рассматривается генеалогия чтения, поскольку оно сформировалось в контексте эволюции письменности и появления новых средств массовой информации и информационно-центрированной письменной культуры. Автор уточняет свое определение понятия «цифровое чтение» и приходит к выводу, что оно наиболее активно используется в образовании, которое стремительно дигитализируется. Автор также подчеркивает особую функцию современных библиотек (публичных, детских, библиотек школ и вузов), которые должны играть роль «компетентного взрослого» в оказании помощи пользователю в развитии компетенций цифрового чтения.

Ключевые слова: чтение, цифровое чтение, обучение, образование, технологии, цифровая библиотека

Для цитирования: *Мелентьева Ю. П. Цифровое чтение: генеалогия формирования и перспективы его развития в условиях цифровизации общества // Библиосфера. 2019. № 4. С. 14–21. DOI: 10.20913/1815-3186-2019-4-14-21.*

1. Introduction

Since the first publication in 1988 devoted to the problems of arising digital reading [1] recent years saw a significant increase in interest in reading studies. This was facilitated mostly by the effort of Russian and foreign researchers, teachers, psychologists, journalists, writers, etc., [2–6] to

attract attention of the state and non-government institutions to the new trends in reading, which are developing in connection with the changes in “Gutenberg’s empire” and the emergence of the virtual environment. Reading is discussed from different viewpoints of different disciplines: information science, education, cultural studies, sociology, philosophy, psychology, library science, etc. Hundreds

of articles, monographs, textbooks have been written on the subject. Reading is also considered in the context of the development of one's personality, as an integral part of education and upbringing, as a means of adaptation to society, as one of the key indicators of society's wellbeing and competitive position of the state [7–19].

It took significant time to realize that firstly, reading, despite the fact it exists in unbreakable bond with written language for over five thousand years already, is being actively transformed today. Secondly, reading remains one of the main existing mechanism to obtain information, knowledge, education, to become familiar with culture.

Today, the problem of reading is considered in the context of the development of the individual, society, state. Its significance has finally become apparent to both professionals and the public. Recently, the notion of “digital reading” has arisen. Let us turn to this concept.

2. Digital reading as a stage in the evolution of written culture

Reading is existing more than 5 thousand years. It was formed as the “reverse side” of writing, and from the very beginning and was, to a certain extent, a means of recognizing and *deciphering* the written text: this is especially clear in the case of such variants of writing as cuneiform, hieroglyphic letter, Arabic ligature, etc. Thus, the function of *deciphering* was inherent in reading from the outset and was determined by the way the text (information) was presented, the features of its carrier, and the social basis of writing. The evolution of all these elements over many centuries and epochs has led to the evolution of the reading itself – its technology, models, modifications, practices. The analysis of these processes, which has been thoroughly studied and comprehended, including to a certain extent – by the authors [8, 20], is out of the scope of this article and is mentioned here only to show that the digitalization of reading is a natural stage of its development, determined by the evolution of written culture and the emergence of a new, so-called “information and media” writing system, which underlies the digital revolution. The writing system has changed – hence the reading has changed.

The digital revolution is defined as the rapid and massive transition from analog to digital processing, storage, and transmission of data (information). It is based on the development and dissemination of new digital systems and devices (primarily digital television, digital telephone, cellular communications, the Internet, computer, etc.). There are also numerous devices to read – all sorts of readers that have certain qualities – a large amount of memory (about 2 thousand books), a flicker-free screen, etc., in addition, digital technologies offer a lot of additional

options besides the text itself. Despite the fact that the beginning of the development of these devices dates back to the early 1950th, it is considered 2002 as the beginning of the digital revolution, when the amount of digital data for the first time exceeded the amount of analog data.

It is worth mentioning that Russia is still lagging the developed countries and is a consumer country of technological innovation, and not a producer and developer country. It should also be noted that while in Russia reading does not suffer too much from the Internet penetration, and in general, now no one predicts *the replacement* of the paper book. Today in Russia, most readers combine electronic and printed reading; the electronic book is perceived as something extra “real”. However, the trend of expanding the field of digital culture is real. Gradual migration of reading into digital format is a process that takes place objectively. Books are digitized by libraries, which are preserving them and expanding the circle of possible readers. We also note that the term “digital” is used over time along with the terms “electronic”, “informational”. However, as far as reading is concerned, and in number of other spheres, the term “digital” is used more often.

3. Digital reading specifying

What is *digital reading*? Earlier we defined this term. In our opinion, this is reading in the electronic environment of texts (in the broadest sense) that have been digitally processed [21]. Making it more exact we can say that digital reading is the process of extracting meaning from a text that is in a digital format. There is no doubt that digital reading, being the most important and so far the only means of developing digital resources, differs significantly from the traditional one ideologically, physiologically and technologically.

The studies show that digital reading changes the very ability to read, even to the extent that it changes the activity of brain structures associated with reading. With digital reading, the reader experiences an overload; an abundance of digital resources, gadgets overload the brain, attention is dissipated, understanding is difficult [22]. This is especially obvious when considering the reading of the so-called hypertext (the term by U. Eco), i. e. the text permeated with references to other texts. As is known, these links allow the supplementation the main text with new information, illustrations, additions, etc., but at the same time distract the reader from the purpose of reading. For the sake of justness, it must be remembered that even in the Middle Ages, there was an adaptation called the “book wheel” – something like a revolving bookcase on the shelves with various books. The “book wheel” allowed reading simultaneously several books, moving from one to another, “jumping” from text to text. This device allowed the reader – as a rule –

the scientist – working with texts to write his text, which facilitated the compilation, citation, etc. Reading a hypertext, “traveling through links” is a lot like this ancient reader’s practice. Thus, digital reading loses the linear character; the load on the brain when reading a hypertext is much greater than with linear reading, and the possibility of deep thoughtful reading is noticeably reduced. The research shows that the level of understanding and the degree of pleasure in reading is decreasing. In a few cases, there is a loss of ability to read from a sheet, especially large fragments bearing in-depth information. Both foreign and domestic scientists [23] devote their researches to understanding of “what the Internet is doing to our brains”.

Researchers note that digital reading refers to a new type of text perception (written information). “We have already moved into another type of civilization, where the volume of information has become so great that it loses a significant part of its value” [24]. Network users do not read the text (hypertext), they scan it.

At first glance, digital reading – reading as scanning – has a few advantages, both technological ones: for example, one can read in the dark, and more significant – easily find information, save texts, realize many tasks while reading; moreover, one can better cope with the multidimensionality of the text; one learns to easily switch attention; more quickly recognizes the potential importance of content. Of course, it must be deeply understood. It is obvious that the change in technology, goals, practices of reading, the formation of the specifics of digital reading is determined by the global digitalization of life, including the formation of a new one – information and media writing. In the modern reading process, when eyes are “moving” text from a book page, three major changes occur on the screen: a technical change appearance and distribution of new devices for reading; textual change – i. e. the layout of the electronic text differs from the traditional one; change in perception – i. e. the text is perceived not as a whole, but as fragments.

4. The risk and benefit of using digital reading in learning. Features of educational reading

Today, digital technologies are increasingly used in virtually all spheres of life: the economy, science, finance, etc. In all these areas, digital resources are growing, the development of which involves the use of digital reading.

The network society forms a digital culture of the person, transforms the whole society: spheres of spirituality, social interaction, and technology.

A particularly important area of digitalization is the sphere of education. First, the content of education is always a text. The most important issues in education have always been:

- What texts are needed for learning?

- How to achieve their understanding; how to teach to create new texts.

Thus, it is obvious that if the basis of education is text, then, therefore, it is reading as well.

Educational reading was formed in Europe with the development of *the education system*, with the advent of universities, although the first cases of using reading for educational purposes can be attributed to the 5th century BC: reading as the main way of teaching was widely used in ancient philosophical schools, gymnasiums, having libraries, etc. Already in the Hellenic era, *textbooks* (on philosophy, military affairs, agriculture) were distributed. A special stage in the formation of academic reading should be attributed to the period between the end of the 11th and the beginning of the 14th centuries when new cities were actively established in Europe, with schools in them where reading was a necessary element of instruction. In Russia, reading arose, simultaneously with the spread of Christianity and literacy. Already in the period from the XI–XIII centuries a few churches and state decrees were issued on the organization of education in Russia, where the most important part was decreed on the creation of textbooks, training courses, educational institutions of various kinds (elementary, Sunday, etc.), where reading was the main method of instruction. In the Middle Ages, serious changes took place in academic reading. All medieval pedagogy was based on the reading texts: on their commenting and interpretation. The Latin word “lectura” meant reading and teaching. At the very basis of academic reading – from a teacher to a student – reading was out loud. And only later in the university environment, reading inwardly became familiar.

The new book is convenient, portable, and cheap. This has become the norm. It is important to note the trend characteristic of all countries, including Russia: among the first printed books were the alphabet, primers, and educational texts. It is characteristic that the modification of the educational reading includes two options: the educational reading of adults and that of children. Each of them has its characteristics.

Educational reading of *adults* (students, post-graduates, etc.) is based on educational literature, primarily – on textbooks, reference books, reading books, etc., and its main purpose is to transfer knowledge, learning, and intellectual development. Educational reading of *children*, the methodology of which was developed during the XVIII–XIX centuries, presupposes not only the intellectual but also the moral development of a child, i. e., his upbringing. While solving the set tasks, certain variations of academic reading were formed, such as “*analytical reading*”, during which students were able to understand the text; as well as “*extracurricular reading*”; “*home reading*”; “*reading for the summer*”; “*expressive reading*” – which had a clear educational aspect.

Learning reading was characterized by the widely used reading out loud when the teacher read to students. Such reading was characteristic both for school and university, where reading aloud (reading a lecture by a professor) was combined with reading inwardly (tracking the text). The book was needed to listen to a public lecture. It should be noted that in the best universities of Europe (for example, in Oxford) the texts of lectures (first handwritten and then printed) have long been provided to students for a small fee. A very important feature of educational reading was its “schooling” method since it was drawn to the text that had passed through the hands of the compiler, through the selection filter. Also, due to the growth of scientific knowledge, educational reading became fragmentary and fractional.

Today, modification of educational reading can probably be recognized as one of the most common. Due to its features, as well as changes in the fields of education and book publishing, it was educational reading that turned out to be particularly susceptible to new reading formats; it was educational reading that actively acquired the qualities of digital reading. It should be noted that today the importance of reading for education (not only in the humanities but also at the interdisciplinary level) is becoming more and more realized and it is on the “reading territory” that the most active pedagogical search is taking place – this applies primarily to primary and secondary schools. But it not the only reason. There is also an understanding of the meaning of “successful reading” and for a successful career, a successful life – an understanding of reading as a strategy of life is formed [25, 26].

This is especially true today, in the conditions of the formation of the digital age. Researchers (for example, [24]) distinguish the following features of education in the digital age:

- the education system becomes the most important branch of the economy of the digital society; the largest intangible asset of any state;
- the ways of creating, transmitting and fixing knowledge change;
- knowledge becomes generally available and relatively cheap due to transnationality and the trans-literal nature of digital technologies;
- there is a rapidly growing market of educational services outside the formal education system;
- there is a growing demand for new competencies and forms of training; and, also on the formation of basic knowledge and skills – for example, skills of *meaningful reading and writing*; ICT literacy, etc.; and, also on such personal qualities as initiative, intellect, non-linear thinking, ability to communicate, emotionality;
- there is a new architecture based on new educational technologies;
- a new type of students has appeared, aimed at self-education, self-actualization, and self-development;

- the formation of the digital age becomes the key to building a new expanded multi-dimensional and multifaceted reality, it lays the foundation for a fundamentally new organization of society’s life, which creates the prerequisites for its modernization as a digital space;

- a unified information and educational environment is being created, which includes: a set of digital educational platforms and technologies; the infrastructure of the digital interaction of subjects of the educational process; digital information and educational content, providing security, reliability, and quality of information.

A significant part of publications is devoted to the problem of the digital revolution in education. All over the world scientific conferences, hearings, summits devoted to new tendencies in education are constantly held [27]. Digital reading actively discussed the “Platform for Supporting the Human Right to Education” (non-governmental organization, Geneva); World Congress of the International Organization for Education (Ottawa, Canada); Oxford Center for Human Rights (Great Britain); Peoples’ Friendship University of Russia (Moscow, Russia); UNESCO (program “Education 2030”), etc. The digital revolution in education has been going on since 2011. Online training is already well established in the US, European countries, in China, an increasing number of open online courses, where you can get the curriculum of prestigious universities. Researchers say that the use of digital technologies, which radically change the processes of learning and mastering knowledge, significantly transforms the landscape of education, above all – the higher one.

Even though it seems that open, online education is good for everyone, there are serious problems with it [28]. One of the most important is the quality of online education. None of the studies conducted over the past 10 years has proven the benefits of online training in the technical, natural sciences, as well as in teaching reading. Researchers on the problem of the digital revolution in education pay special attention to the preservation of universal values by using digital technologies, strengthening the understanding of education as a public good, strengthening the humanistic mission of education. All these problems are directly related to the problem of digital reading, which, to a large extent, should ensure the quality of education and education, as well as contribute to the humanization of education. The researchers also propose realistic assessments of the risks of online education paying attention to the fact that digital technologies have a negative impact on students’ ability to think logically and critically. Moreover, in this regard, the problem of digital reading is once

again a means of mastering digital educational resources. There is a danger that poorly mastered digital reading of hypertext will lead the reader to a dead end. He needs help with how to navigate the diversity of digital resources, how to build a reading path, how to combine digital and linear reading, and so on.

Thus, we can draw some conclusions about the fact that:

- Digital reading is the natural and inevitable stage of the evolution of reading, caused by the evolution of writing as the basis of a new civilization;
- Digital reading inherits all the problems associated with traditional reading, and in also the problems caused by the peculiarities of digital content, resources, etc.;
- Master of Digital reading, as well as traditional reading, requires the help of “qualified adults”.

5. The role of the library in shaping the culture of digital reading

It should be noted that the digitized library is closely connected with the phenomenon of digital reading.

One of the most important challenges facing the library today is how to save its role, not to lose its advantages and adapt them to the conditions of the emerging digital society. The library as the main fundamental institution – “holder” of huge multidimensional information in the traditional (text) format, is under intense pressure from new structures that initially represent information in digital form. And this situation is global. Indeed, since more than 30 years have passed since the initial emergence of this situation – in America and the countries of Europe – librarians from these countries had the opportunity to form their position on this issue. It is reflected in the documents of IFLA (International Federation of Library Associations;), ALA (American Library Association), Pew & American Life Project, UN (Access and Opportunities for All. The Contribution of Libraries to the UN Agenda until 2030) and others. It consists mainly of the following:

- in the conditions of digitalization of the Library remain the most important social institutions, “bringing the public good”;
- due to its natural flexibility, libraries successfully adapt to the needs of users and new conditions, including in the digital environment;
- the role of the librarian as a navigator and consultant in the digital environment is estimated quite high;
- one of the basic missions of libraries remains educational, despite the fact that the educational sphere is most actively “digitized”.

Unfortunately, the fundamental provisions developed by foreign colleagues are not sufficiently taken into account when one speaks about similar problems in the Russian social context.

The idea that the traditional library has outlived itself is being introduced into the public consciousness and the consciousness of the authorities is not valuable for the future of digital society, since “everything is on the Internet”. The lack of funds, as well as insufficient general level of culture of local decision-makers, does not allow understanding the meaning of the library as a fundamental social and informational, scientific and educational institution and makes it very tempting to “save” on it: the announced “modernization” of the library cases, as a rule, leads to the dissolution of libraries (every year about a thousand libraries are closed in Russia; 244 children’s libraries have been closed recently). State funding for the acquisition of libraries (including research and academic ones) by new editions, subscriptions to periodicals, Internet connection, access to electronic resources (only two-thirds of libraries have access to Internet in Russia, and less.) is not enough. Funds for the repair, renovation of library interiors, as well as for advertising their activities, for raising the skills of library staff, etc., are also very sparingly allocated.

It should be noted that in these complex, and sometimes very difficult conditions, Russian libraries find opportunities for development, in the digital environment, in particular. This is evidenced by the news feed of the Russian Library Association (RBA News). Libraries, with the help of various kinds of philanthropists, foundations, partners, and enthusiasts, daily prove their relevance not only to readers but also to the general public. There are new services, new forms of providing information, including digital and mobile.

Recently, “ordinary resistance” of the Russian library community was noticed by the country’s authorities: a number of decrees and government decisions were adopted (see the Government Portal of Russia; Government Session №36, 2016), relevant ministries on a number of measures aimed at developing libraries (for example school).

One of the results of the attention paid to the problems of libraries was the adoption of the National Concept for the program of support for children and youth reading in the Russian Federation, which, however, does not cover the problems of all libraries.

The library community, especially the Russian Library Association, has formulated a number of key provisions that should contribute to the

preservation of space, strengthening the role of the traditional library in the digital environment without losing its absolute advantages.

In summary, these judgments can be formulated as follows.

- The activities of the traditional Library in the digital environment should be based on the classical postulates: the cumulation and preservation of scientific, educational, cultural heritage; prompt dissemination of information; broadcast information, etc.

- The library functions – humanistic, scientific informational, educational, socializing, service, communicative, etc. should remain the same, but technologies (open access, distance, single entry point, navigation through a large amount of resources (sources), materials; multifunctional service; semantic web technologies, etc.) and the directions and forms of activity associated with their appearance require cardinal professional flexible and correct reforming.

- Libraries have certain advantages over the Internet:

- each library purposefully forms its fund, focusing on the information needs of users;

- all documents in the library are lawfully acquired and reliable;

- the storage of documents is organized based on professional traditions, which contributes to their rapid finding;

- search for documents and information is based on a special reference and search apparatus – classifiers, dictionaries, subject headings, thesauri, etc., which provides relevant and accurate search.

- The weak side of the Library is the lag in the field of work with electronic resources, search technology, and user-friendly interface.

- The library needs to learn how to use its funds in the digital environment: i. e. be able to legally (subject to copyright) translate funds into electronic form and provide access to them via the Internet. In this case, the Libraries will enjoy the preferred demand from users.

Successful library development in the digital age requires a number of changes at various levels: ideological, legislative, organizational, and technological ones. One of the most important tasks is the formation of a *model of professional education – improving qualifications* through the development of *professional technologies* of the new level

Extremely important is the principle requirement at all levels – legislative, organizational, structural, technological and financial – to turn the Russian library system (together with archives and museums) into the main provider of cultural content (heritage) into the Internet within the framework of the current legislation

in order to avoid in the future, when Google, illegally digitized almost all the literary heritage of the world.

Fulfillment of these conditions will contribute to strengthening the role and place in the digital environment of the library as an essential social, educational, educational institution, raising the general standard of living of the people of the Russian Federation, stabilizing the public climate, creating a more successful young generation with the necessary competencies, as well as a decent position of the Russian information society in general. Currently, users can access the funds of almost all world libraries. However, special attention should be paid to the school, children's, as well as to the educational library, since it is there that the process of education begins and goes through reading, first of all, educational.

School, children's, educational library – the center of the organization of reading and not only academic. This is a place where a reader and a clever adult are united – a teacher, librarian, lecturer. Such a library should be visible, that is, it should be presented in the Internet space: have its own website, conduct reading forums, keep reading blogs, make recommendations in the field of reading, be present on social networks, use the numerous network resources available for reading lovers.

The most important task is also the training of specialists who can teach not only the use of digital resources and technologies but also new media writing; reveal the evolution and possibilities of traditional and the possibilities and risks of digital reading. This is the most painful problem since the professional training of library specialists in our country is practically destroyed. And it will take a lot of power for its revival in a renewed, modern form. But this, as they say, is another story. Thus, the role of the digital library in the new digital society not only does not decrease but, obviously, it intensifies: it must combine its traditional and new possibilities to help the reader, expand his capabilities and preserve the advantages that the reader has, i. e., a person who reads in both traditional and digital environments.

The most important problem – and the task – is also the training of specialists who can teach not only the use of digital resources and technologies but also new media writing; to reveal the evolution and possibilities of traditional and opportunities and the risks of digital reading. This is the most acute and most painful problem, because the professional training of library specialists in our country, in fact, practically, is destroyed. And it will take a lot of effort to revive it in a modern, updated form.

But this is, as they say, a completely another story.

Conclusion

Thus, we can conclude that digital reading is most actively employed in education, which is rapidly becoming digitalized. It is necessary

to emphasize that the special function of modern libraries (public libraries, children's libraries, educational libraries) should play the role of the "competent adult" in helping a user to develop the digital reading competences. ■

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Статья поступила в редакцию 20.10.2019

Получена после доработки 30.10.2019

Принята для публикации 12.11.2019

Received 20.10.2019

Revised 30.10.2019

Accepted 12.11.2019

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